Acta Zootaxonomica Sinica , 34 (4) : 712 - 721 (Oct. , 2009) ISSN 1000-0739
动物分类学报

PARABORBOROPACTUS GEN. NOV., WITH DESCRIPTION OF THREE NEW SPECIES OF CRAB SPIDERS FROM XISHUANGBANNA, YUNNAN, CHINA (ARANEAE, THOMISIDAE)

TANG Guo[1,2] , LI Shu-Qiang[1*]
1. *Institute of Zoology , Chinese Academy of Sciences , Beijing* 100101 , *China*
2. *College of Life Sciences , Hunan Normal University , Changsha* 410081 , *China*

Abstract A new genus: Paraborborpactus gen. nov. of the thomisid spider subfamily Stephanopinae from Xishuangbanna Rainforest, Yunnan , China was erected to accommodate the following three new species: Paraborborpactus zhengi sp. nov. , Paraborborpactus leguminaceus sp. nov. and Paraborborpactus rhombus sp. nov. Morphological descriptions , illustrations and photos of all three new species are given. The type specimens are deposited in the Institute of Zoology , Chinese Academy of Sciences in Beijing.

Key words Taxonomy , Borborpactus , new genus , new species , tropical rainforest.

1 Introduction

Thomisidae , the sixth largest spider family , includes 7 subfamilies , 173 genera , and 2093 species , of which more than 500 species from 71 genera and 6 subfamilies are recorded from Asia (Murphy & Murphy , 2000; Platinck , 2009). The subfamily Stephanopinae includes 35 genera and 11 of them are found from Southeast Asia. Spiders of the subfamily Stephanopinae were considered have teeth on both marginal of chelicerae (Ono , 1988). The genus Borborpactus was elevated to family rank (Wunderlich , 2004) but was rejected by the molecular phylogenetic evidence (Benjamin , 2008). Benjamin et al. also proposed the monophyly of Thomisidae with four major lineages provisionally , the Borborpactus clade , Epidius clade , Stephanopis clade and Thomisus clade. The genus Borborpactus Simon , 1884 now has 14 species including 2 juveniles , and only B. cinerascens (Doleschall , 1859) with both sexes. The species: B. hainanus and B. jiangyong were recorded from China (Song , 1993 , 1994; Yin et al. , 2004).

Xishuangbanna of southern Yunnan is biogeographically located at a transitional zone from tropical Southeast Asia to subtropical East Asia. South Yunnan is a part of the biodiversity hotspot of Eastern Himalayas. Xishuangbanna is a key area in biogeography and a hotspot for biodiversity (Myers , 1998). Recently , a two-year spider survey in Xishuangbanna Rainforest (2006-2007) was carried out in Xishuangbanna rainforest by the colleagues of the IZCAS.

In this study , three interesting crab spiders are found to be similar to Borborpactus Simon , 1884 but differ distinctly. It seems difficulty to allocate them to any known genus in Thomisidae. So we erect the new genus Paraborborpactus gen. nov. to accommodate them. The genus Paraborborpactus should be a member of the Borborpactus clade (Benjamin et al. 2008) according to the synapomorphies characters shared with Borborpactus: chelicera with teeth; femur swollen in the median and bear spurs; palp with a soft tegular apophyysis (hood) , epigynum usually with epigynal teeth , etc.

2 Material and Methods

Specimens were examined with an Olympus (Tokyo , Japan) SZX12 stereomicroscope; details were studied with an Olympus BX51 compound microscope. All illustrations were made using an Olympus drawing tube. All measurements are given in millimeters. Eye diameters are taken at the widest point. The total body length does not include the length of the chelicerae or spinnerets. Left structures (e. g. , palp , legs and chelicerae) are measured and described. RTA width refers the width of the basal of RTA. Leg measurements are given as: Total length (femur , patella + tibia , metatarsus , tarsus). The terminology used in text and figure mainly follows Ono , 1988.

Abbreviations used in text and legends. AER = anterior eye row; ALE = anterior lateral eyes; AME = anterior median eyes; C = conductor; CA = cavity; CH = clustered hairs; CO = couplatory opening; E = embolus; ET = epigynal tooth; H = hood; MA = median apophysis; MOA = median ocular area; PER = posterior eye row; PLE = posterior lateral eyes; PME = posterior median eyes; RTA = retrolateral tibial apophysis; R = ridge; S = scopulae; VTA = ventral

The subject was supported by the National Natural Sciences Foundation of China (NSFC-30970320) , National Science Fund for Fostering Talents in Basic Research (Special Subjects in Animal Taxonomy , NSFC-J0630964/J0109) and Postdoctoral Science Foundation (20090450054).

* Corresponding author , E-mail :lisq @ioz. ac. cn

Received 27 July 2009 , accepted 7 Sep. 2009.

tibial apophysis.

All types of the new species are deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing (IZCAS). Type specimen photos of the species can be viewed from http://www.ChineseSpecies.com (Li & Wang, 2009).

3 Taxonomy

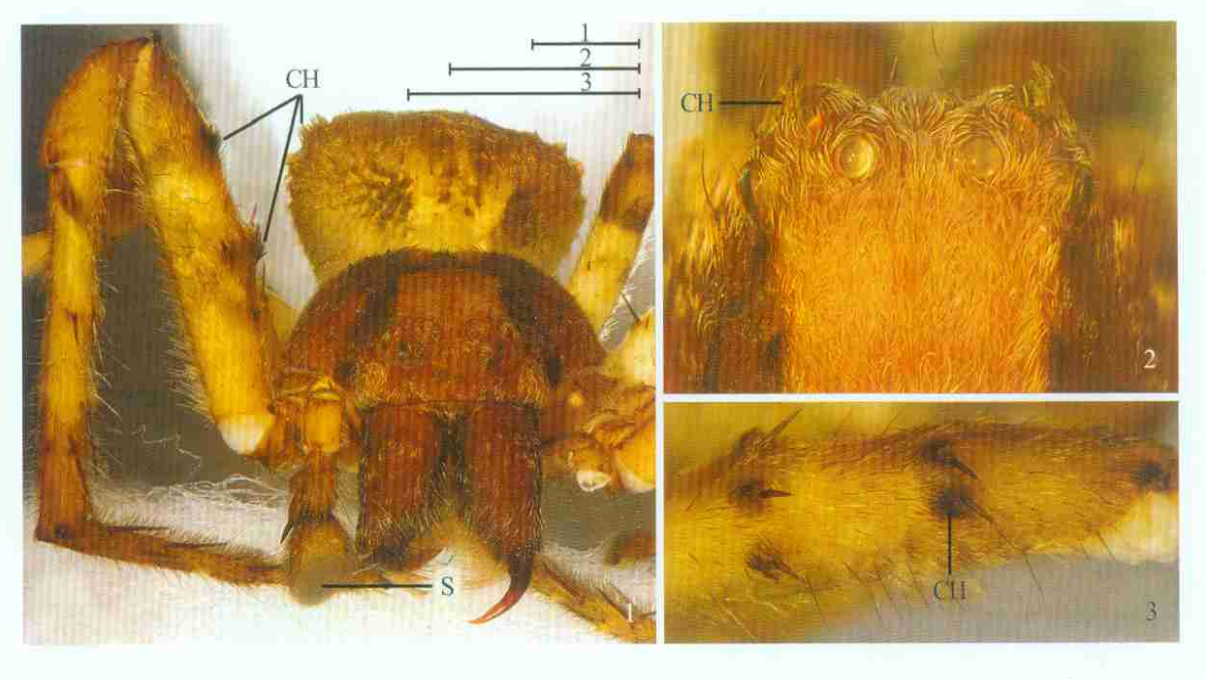
Family Thomisidae Sundevall, **1833**

Genus Paraborboropactus gen. nov.

Type species: Paraborboropactus zhengi sp. nov.

Etymology. The generic name is a compound word with the prefix "para" and the generic name of Borboropactus, referring to its similarity to the genus Borboropactus Simon, 1884.

Diagnosis. This genus is similar to the genus Borboropactus Simon, 1884 in the general appearance and the genital organs, but can be separated from the latter by: 1) eye area width / head width = 0.67 in this new genus vs. 1.00 in Borboropactus, head area width / carapace width = 0.58 vs. 0.39 in Borboropactus; 2) habitus with ordinary hairs vs. claviform hairs in Borboropactus; 3) AER forward, AER and PER in two vertical planes vs. AER and PER in the same plane in Borboropactus; 4) femur Ⅰ slightly swollen, having 6-8 thick spines with clustered hairs vs. femur Ⅰ swollen into 2 times the size of the proximal part, only have 2-3 thick spines in Borboropactus; 5) Metatarsi Ⅰ, Ⅱ and tarsi Ⅰ-Ⅳ all with ventral scopulae vs. absent in Borboropactus.



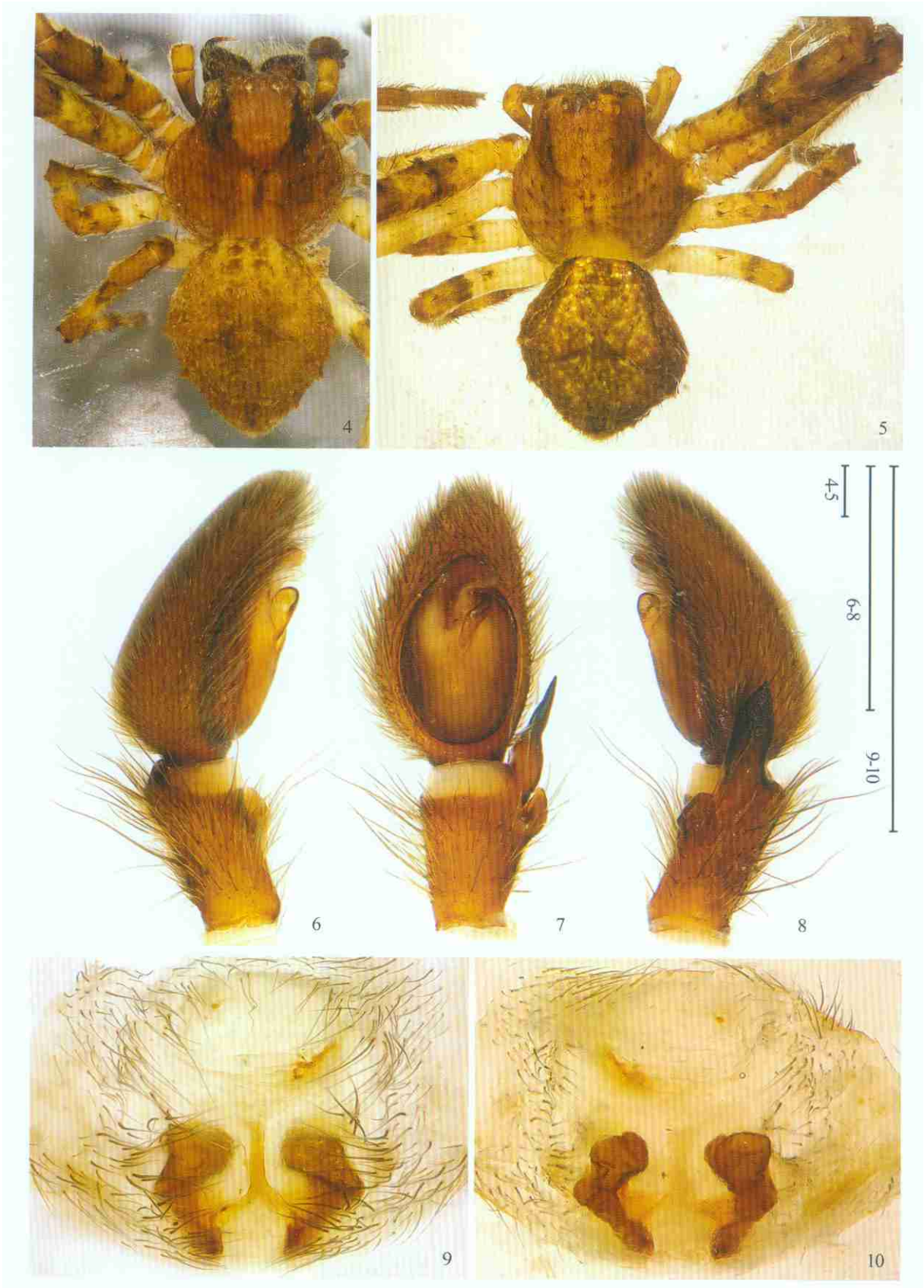
Figs. 1-3. Paraborboropactus zhengi sp. nov. 1. Male habitus, front view. 2. Eye area. 3. Distal part of femur Ⅰ. Scale bars = 1.0 mm.

Description. Some characters as in diagnosis. Median sized thomisids: male, 3.40-7.00; female, 6.30-8.50. Prosoma flat. Habitus clung with dense short hairs, and have some clustered hairs. ALE > PLE > PME > AME. ALE and PLE elevated, eye tubercles indistinctly, tubercle of ALE with clustered hairs (Fig. 2). Chelicera with 3 pro- and retromarginal teeth. Femur Ⅰ slightly swollen and with 6-8 thick spines, which each surrounded with clustered hairs (Fig. 3). Tibiae and metatarsi Ⅰ, Ⅱ usually with 4, 3 pairs of ventral spines. Opisthosoma usually with clustered hairs (Fig. 1). Palp with small VTA and large RTA, bulb with a cup-shaped median apophysis, conductor hyaline membranous, embolus lamella-shaped. The dorsum of palpal cymbium usually with dense trim scopulae (Figs. 1, 12, 24). Epigynum with an anterior cavity or hood and a pair of epigynal teeth. Copulatory ducts invisible, spermatheca convoluted.

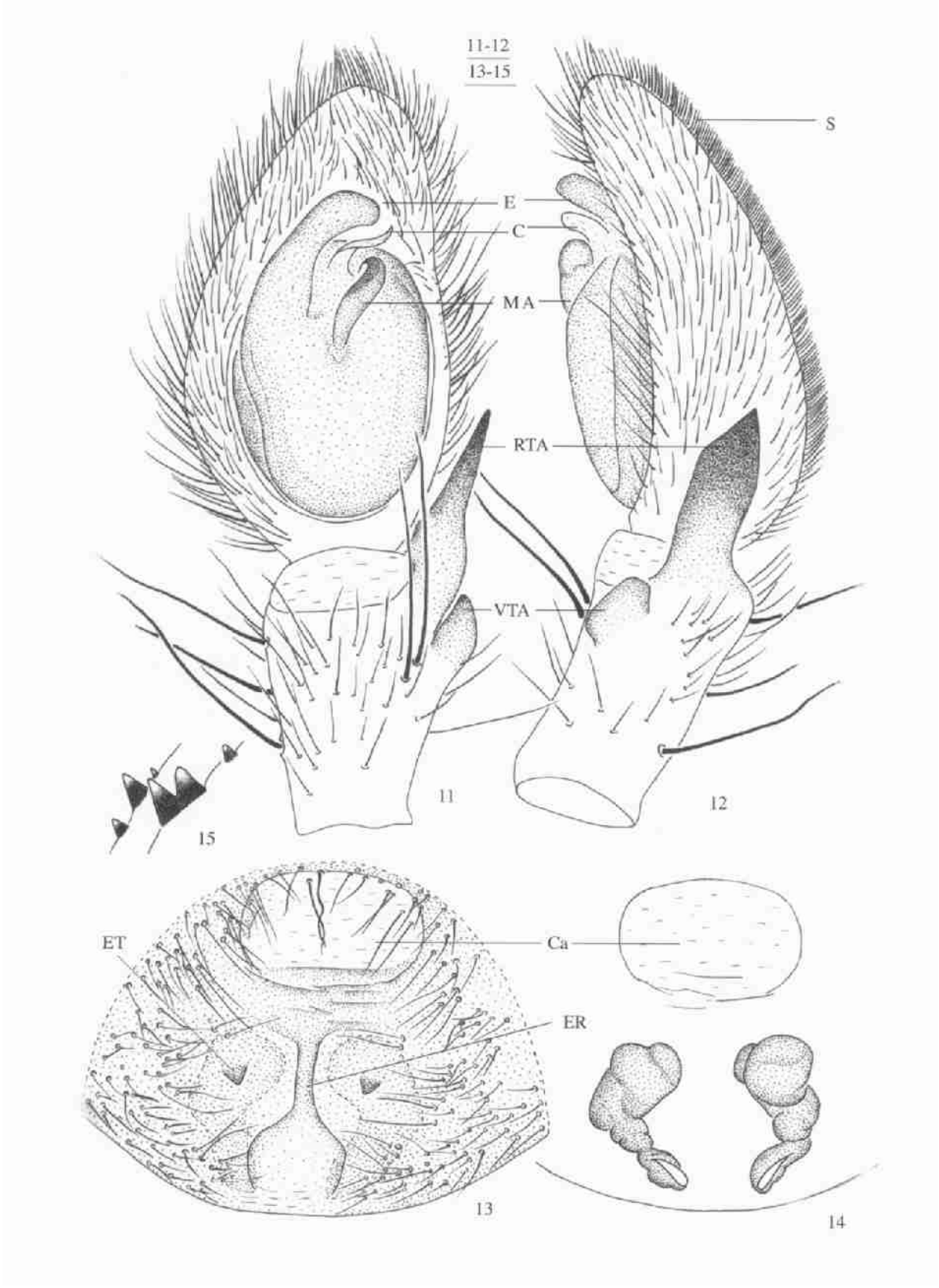
Included species. P. zhengi sp. nov., P. leguminaceus sp. nov. and P. rhombus sp. nov.

Distribution. China (Yunnan).

Type material (all from China, Yunnan Province, Xishuangbanna, Mengla County, Menglun Town, collected by ZHENG Guo). Holotype male, secondary tropical montane evergreen broad-leaved forest (21°54′N, 101°12′E; alt. 876 m), 5 Aug. 2007, ZHENG Guo leg. Paratypes: 1 male, 1 female, same data as holotype; 3 males, 1 female, primary tropical seasonal rain forest (21°55′N, 101°16′E; alt. 558 m), 22 July 2007; 1 male, 1 female, secondary tropical seasonal moist forest (21°54′N, 101°16′E; alt. 645 m), 27 July 2007; 1 male, secondary tropical montane evergreen broad-leaved forest (21°57′N, 101°12′E; alt. 888 m), 4 Aug. 2007; 1 male, primary tropical seasonal



Figs. 4-10. Paraborboropactus zhengi sp. nov. 4. Male habitus, dorsal view. 5. Female habitus, dorsal view. 6. Left palp, prolateral view. 7. Same, ventral view. 8. Same, retrolateral view. 9. Epigynum, ventral view. 10. Vulva, dorsal view. Scale bars = 1.0 mm.



Figs. 11-15. Paraborboropactus zhengi sp. nov. 11. Left palp, ventral view. 12. Same, retrolateral view. 13. Epigynum, ventral view. 14. Vulva, dorsal view. 15. Male left cheliceral teeth, ventral view. C = conductor, Ca = cavity, E = embolus, ER = epigynal ridge, ET = epigynal tooth, MA = median apophysis, RTA = retrolateral tibial apophysis, VTA = ventral tibial apophysis. Scale bars = 0.1 mm.

rain forest (21°57′N, 101°11′E; alt. 895 m), 6 Aug. 2007; 2 females, primary tropical seasonal rain forest (21°54′N, 101°13′E; alt. 734 m), 8 Aug. 2007; 1 female, secondary tropical seasonal moist forest (21°54′N, 101°16′E; alt. 656 m), 10 Aug. 2007; 3 females, secondary tropical seasonal moist forest (21°54′N, 101°16′E; alt. 612 m), 10 Aug. 2007; 3 males, 2 females, Paramichelia baillonii plantation (21°54′N, 101°16′E; alt. 895 m), 18 Aug. 2007; 1 female, Paramichelia baillonii plantation (21°53′N, 101°17′E; alt. 613 m), 18 Aug. 2007.

Etymology. The specific name is a patronym in honor of Dr. ZHENG Guo, who collected the type specimens.

Diagnosis. This new species is similar to Paraborborpactus leguminaceus sp. nov., but can be separated from the latter by: 1) RTA long/width = 2.00 vs. 1.00 in P. leguminaceus; 2) cymbial dorsum with scopulae vs. only distal half of cymbial dorsum with scopulae in P. leguminaceus; 3) the epigynal tooth located in the median area and point backward vs. located in the posterior area and point forward in P. leguminaceus; 4) the epigynal ridge nearly inverted T-shaped vs. triangle in P. leguminaceus.

Description. Male (measurements of the holotype). Total length 7.00. Prosoma length 3.20, width 3.30; Opisthosoma length 4.00, width 3.10. Prosoma brown with some black clustered hairs. Eye area elevated, AER forward, tubercle of ALE with clustered hairs. Eye measurements, AME 0.10; ALE 0.20; PME 0.14; PLE 0.18; AME-AME 0.20; AME-ALE 0.20; PME-PME 0.36; PME-PLE 0.30. MOA length 0.62 with front width 0.42 and back width 0.70. Chelicera, gnathocoxa, labium blackish brown, chelicerae with three pro-and retromarginal teeth, the basal of the 2 large retromarginal teeth combined (Fig. 15). Sternum brown. Femur Ⅰ slightly swollen, and bears 8 thick spines and clustered hairs. Tibiae, metatarsi of Ⅰ, Ⅱ with 4, 3 pairs of ventral spines respectively, leg formula: Ⅱ, Ⅰ, Ⅳ, Ⅲ; leg measurements: Ⅰ: 13.30 (4.00, 5.50, 2.50, 1.30); Ⅱ: 13.70 (4.20, 5.60, 2.60, 1.30); Ⅲ: 7.00 (2.20, 2.50, 1.40, 0.90); Ⅳ: 7.60 (2.30, 2.80, 1.60, 0.90). Opithosoma near oval, dorsum with some small clustered hairs. Venter gray.

Palp (Figs. 6-8, 11, 12). VTA digitiform, and separated from RTA basally, RTA long lanciform, the apex sharp, cymbial dorsum with short scopulae. Bulb with a cup-shaped median apophysis, conductor hyaline membranous, embolus lamella-shaped.

Female (measurements of paratype). Total length 6.80. Prosoma length 3.20, width 3.40; Opisthosoma length 3.70, width 3.20. Eye measurements: AME 0.10; ALE 0.22; PME 0.20; PLE 0.18; AME-AME 0.22; AME-ALE 0.22; PME-PME 0.40; PME-PLE 0.36. MOA length 0.38 with front width 0.42 and back width 0.70. Chelicera with three pro- and retromarginal teeth, the basal of the 2 large retromarginal teeth combined. Femur Ⅰ slightly swollen, and bears 8 thick spines with clustered hairs. Leg formula: Ⅱ, Ⅰ, Ⅳ, Ⅲ; leg measurements: Ⅰ: 12.30 (3.70, 5.00, 2.40, 1.20); Ⅱ: 11.70 (4.00, 4.00, 2.40, 1.30); Ⅲ: 6.30 (2.00, 2.30, 1.20, 0.80); Ⅳ: 7.10 (2.30, 2.70, 1.30, 0.80).

Epigynum (Figs. 9, 10, 13, 14). Epigynum with an anterior cavity and a pair of epigynal teeth medially, the longitudinal epigynal ridge slim anteriorly and wide posteriorly. Copulatory ducts not visible. Spermathecae convoluted.

Distribution. China (Yunnan).

Variation. Total length, male: 6.00-7.00 (n = 11); female: 6.30-8.40 (n = 12).

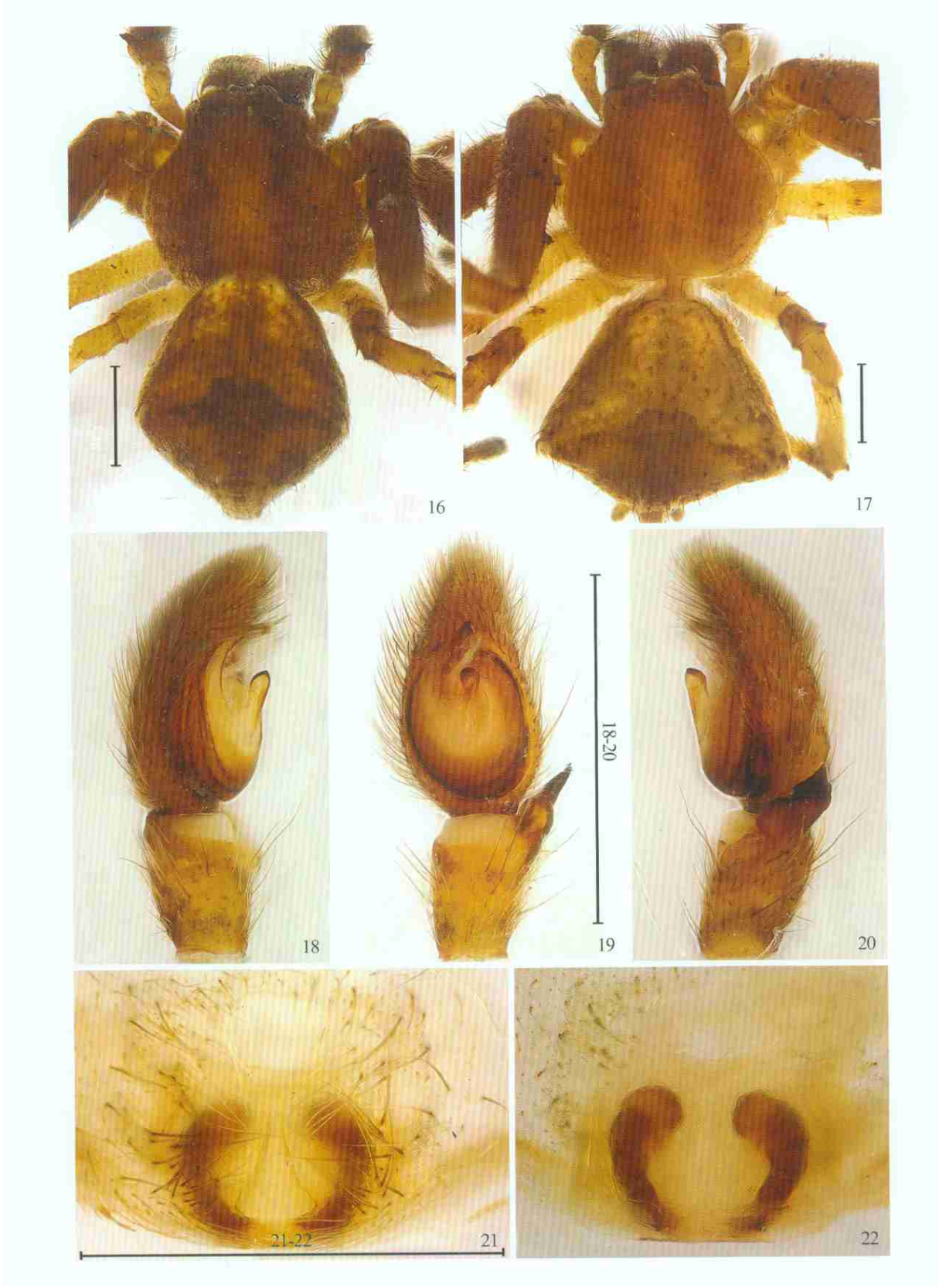
Type material (all from China, Yunnan Province, Xishuangbanna, Mengla County, Menglun Town, collected by ZHENG Guo). Holotype male, secondary tropical seasonal moist forest (21°54′N, 101°16′E; alt. 612 m), 10 Aug. 2007. Paratypes: 1 male, same data as holotype; 1 female, primary tropical seasonal rain forest (21°55′N, 101°16′E; alt. 558 m), 22 July 2007; 1 male, Paramichelia baillonii plantation (21°54′N, 101°16′E; alt. 608 m), 18 Aug. 2007.

Etymology. The specific epithet is taken from the Latin adjective leguminaceus and means beanpod like, and refers to the shape of the beanpod-shaped spermatheca, adjective.

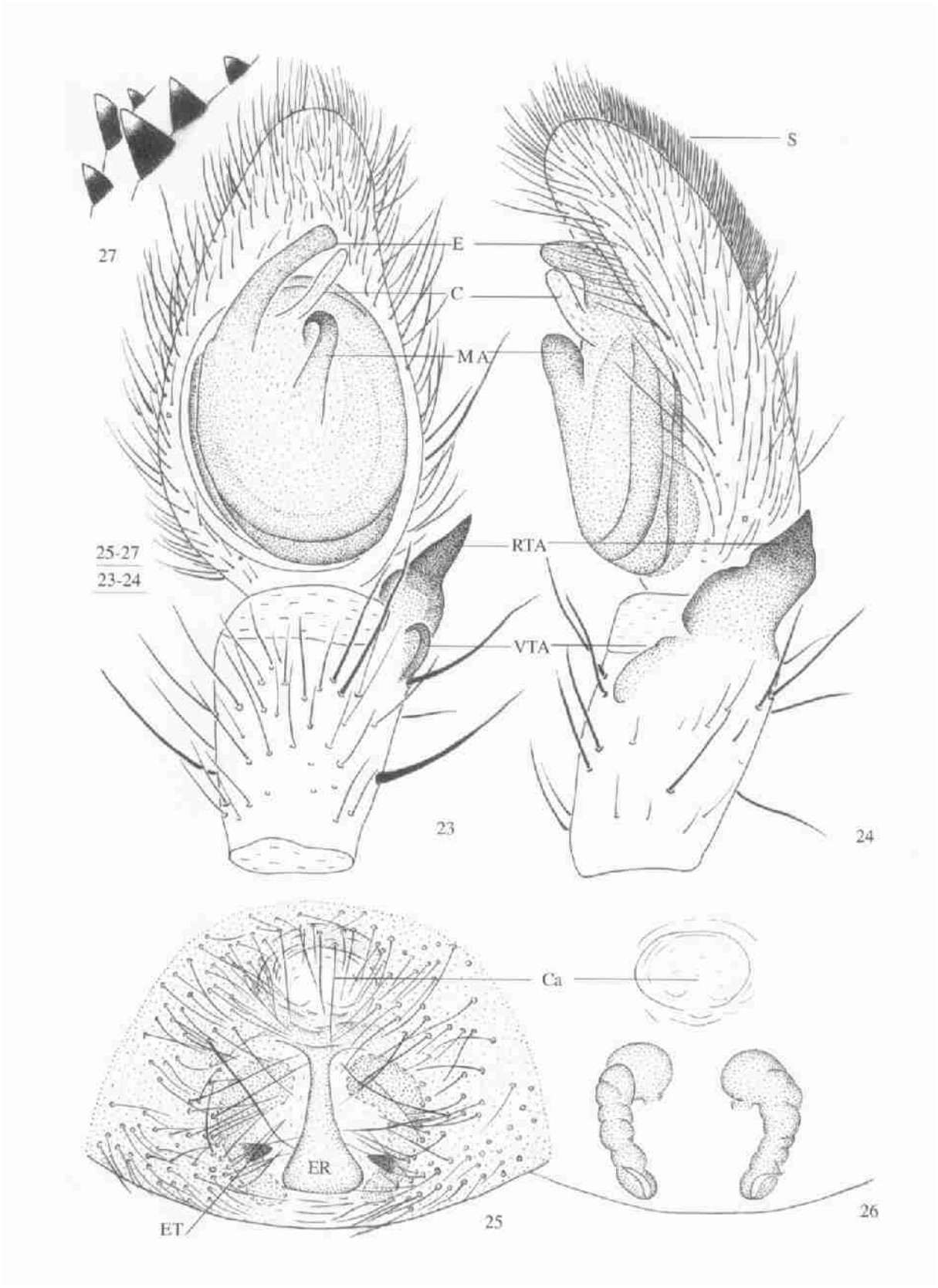
Diagnosis. This new species is similar to P. zhengi sp. nov., the differences are discussed in the diagnosis of the P. zhengi sp. nov.

Description. Male (measurements of the holotype). Total length 4.50. Prosoma length 2.30, width 2.30; Opisthosoma length 2.50, width 2.10. Prosoma grayish brown, clung with short white hairs and few clustered hairs. Eye area elevated, tubercles of ALE with clustered hairs. Eye measurements: AME 0.07; ALE 0.20; PME 0.10; PLE 0.17; AME-AME 0.12; AME-ALE 0.10; PME-PME 0.20; PME-PLE 0.24. MOA length 0.40 with front width 0.24 and back width 0.36. Chelicera blackish brown, gnathocoxa, labium grayish brown, sternum brown. Chelicera with three pro- and retromarginal teeth (Fig. 27). Femur Ⅰ with 8 spines. Tibiae, metatarsi Ⅰ, Ⅱ with 4, 3 pairs of ventral spines respectively. Leg formula: Ⅱ, Ⅰ, Ⅳ, Ⅲ; leg measurements: Ⅰ: 11.30 (3.50, 4.50, 2.20, 1.10); Ⅱ: 11.60 (3.60, 4.60, 2.30, 1.10); Ⅲ: 4.00 (1.50, 1.20, 0.70, 0.60); Ⅳ: 4.60 (1.70, 1.40, 0.90, 0.60). Opisthosoma round anteriorly and sharp in the rear, dorsum with some small clustered hairs. Venter grayish yellow.

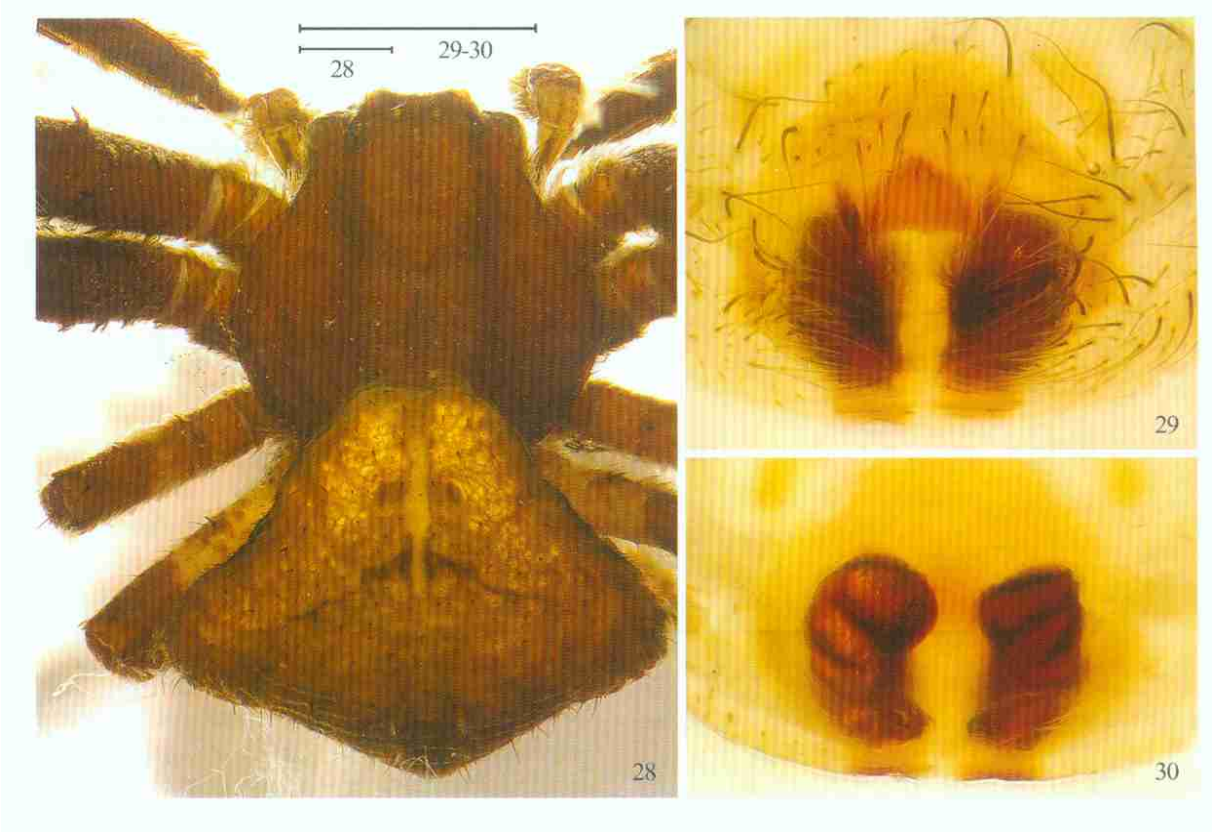
Palp (Figs. 18-20, 23, 24). VTA ear-shaped, and combined to RTA basally, RTA wide in the basal, the



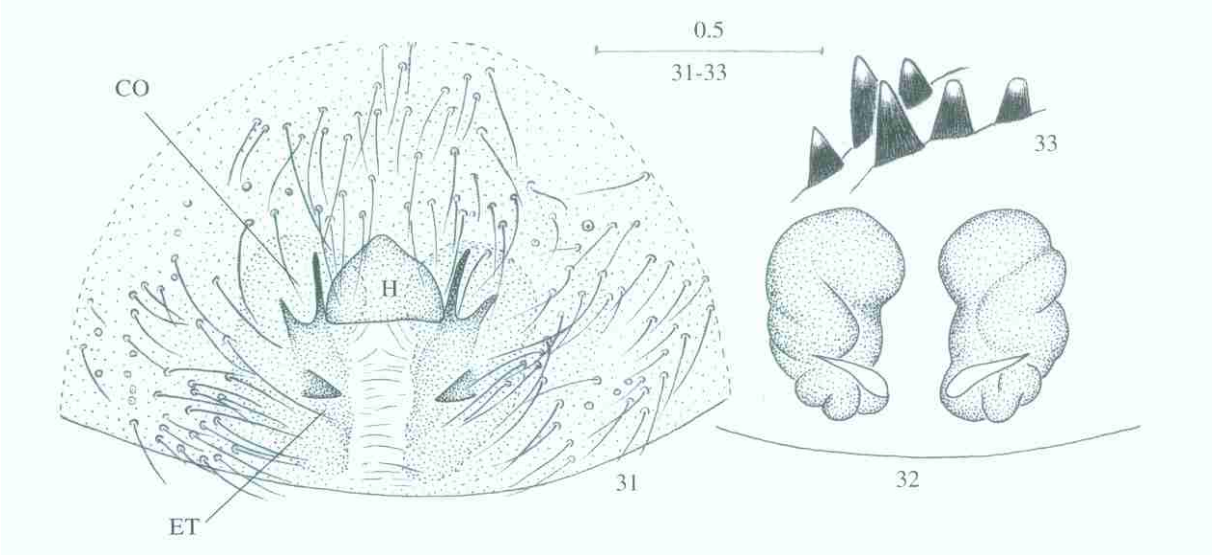
Figs. 16-22. Paraborboropactus leguminaceus sp. nov. 16. Male habitus, dorsal view. 17. Female habitus, dorsal view. 18. Left palp, prolateral view. 19. Same, ventral view. 20. Same, retrolateral view. 21. Epigynum, ventral view. 22. Vulva, dorsal view. Scale bars = 1.0 mm.



Figs. 23-27. Paraborboropactus leguminaceus sp. nov. 23. Left palp, ventral view. 24. Same, retrolateral view. 25. Epigynum, ventral view. 26. Vulva, dorsal view. 27. Male left cheliceral teeth, ventral view. C = conductor, Ca = cavity, E = embolus, ER = epigynal ridge, ET = epigynal tooth, MA = median apophysis, RTA = retrolateral tibial apophysis, VTA = ventral tibial apophysis, Scale bars: 23-27 = 0.1 mm.



Figs. 28-30. Paraborboropactus rhombus sp. nov. 28. Female habitus, dorsal view. 29. Epigynum, ventral view. 30. Vulva, dorsal view. Scale bars: 28 = 1.0 mm. 29-30 = 0.5 mm.



Figs. 31-33. Paraborboropactus rhombus sp. nov. 31. Epigynum, ventral view. 32. Vulva, dorsal view. 33. Male left cheliceral teeth, ventral view. CO = copulatory opening, ET = epigynal tooth, H = hood. Scale bars = 0.5 mm.

distal half of the cymbial dorsum with scopulae. Bulb with a cup-shaped median apophysis, conductor hyaline membranous, embolus lamella like.

Female (measurements of paratype). Total length 6.60. Prosoma length 3.10, width 3.00; Opisthosoma length 3.50, width 3.60. Prosoma brown with some short hairs. Tubercle of ALE with clustered hairs, eye measurements: AME 0.67; ALE 0.23; PME 0.12; PLE 0.20; AME-AME 0.14; AME-ALE 0.14; PME-PME 0.24; PME-PLE 0.28. MOA long 0.52 with front width 0.30 and back width 0.50. Chelicera blackish brown, gnathocoxa, labium dark brown, sternum yellow, chelicera with three pro- and retromarginal teeth. Femur Ⅰ slightly swollen, and bears 8 spines with small clustered hairs. Tibiae, metatarsi Ⅰ, Ⅱ with 4, 3 pairs of ventral spines respectively. Leg formula: Ⅱ, Ⅰ, Ⅳ,

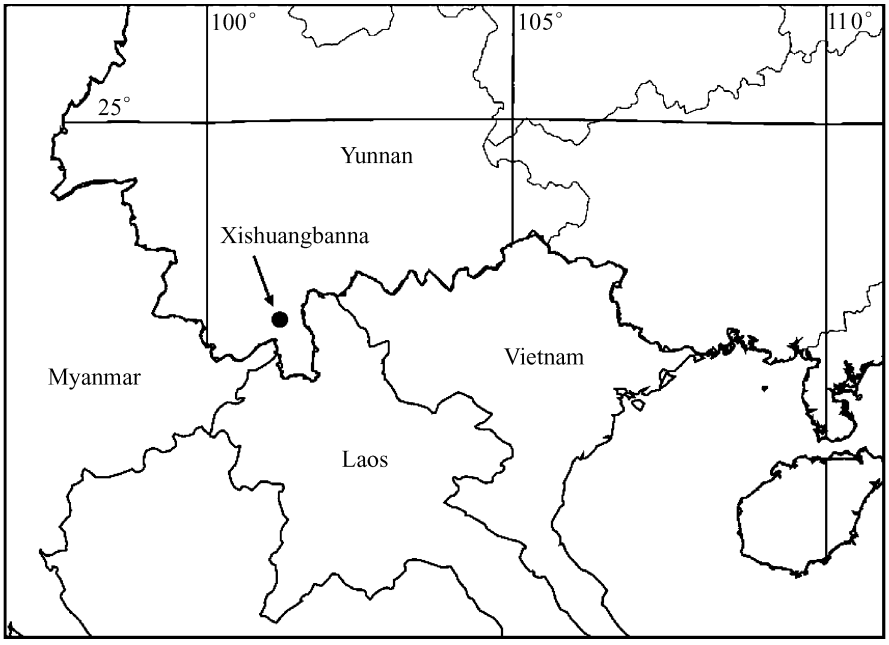


Fig. 34. Locality of Xishuangbanna, from which these 3 species of the crab spider genus Paraborboropactus were collected.

Ⅲ; leg measurements: Ⅰ: 9.20 (2.80, 3.80, 1.60, 1.00); Ⅱ: 9.50 (3.00, 3.80, 1.70, 1.00); Ⅲ: 4.50 (1.50, 1.50, 0.80, 0.70); Ⅳ: 5.50 (1.80, 2.00, 1.00, 0.70). Opisthosoma yellow, dorsum with some clustered hairs and black ordinary hairs. Venter grayish yellow.

Epigynum (Figs. 21-22, 25-26). Epigynum with an anteriorly cavity and a pair of posterior epigynal teeth, the epigynal ridge triangle like. Copulatory ducts not visible. Spermatheca slim and convoluted.

Distribution. China (Yunnan).

Variation. Total length, male, 3.40-4.50 (n = 3).

Type material. Holotype female, China: Yunnan Province, Xishuangbanna, Mengla County, Menglun Town, Paramichelia baillonii plantation (21°54′N, 101°16′E; alt. 556 m), 5-12 Jan. 2006, collected by ZHENG Guo.

Etymology. The specific epithet is taken from the Latin adjective rhombus and refers to the shape of the opisthosoma rhombic, adjective.

Diagnosis. This new species with an anterior large hood while two other species of this genus with an anterior cavity which can be separated from other 2 members of this genus.

Description. Female (holotype). Total length 8.50. Prosoma length 4.50, width 4.40; opisthosoma length 4.70, width 6.10. Prosoma brown, elevated paramedianly. Tubercle of ALE with short clustered hairs. Eye measurements. AME 0.10; ALE 0.21; PME 0.17; PLE 0.22; AME-AME 0.16; AME-ALE 0.24; PME-PME 0.34; PME-PLE 0.36. MOA long 0.66 with front width 0.38 and back width 0.66. Chelicera with three pro- and retromarginal teeth, 2 retromarginal ones truncated (Fig. 33). Gnathocoxa, labium dark brown, sternum brown. Legs Ⅰ, Ⅱ black brown, legs Ⅲ, Ⅳ yellow. Metatarsi Ⅰ, Ⅱ and tarsi Ⅰ-Ⅳ all with ventral scopulae. Coxae and trochanters of legs Ⅰ, Ⅱ and metatarsi and tarsi of Ⅲ, Ⅳ all with many long white hairs. Leg formula: Ⅱ, Ⅰ, Ⅳ, Ⅲ; leg measurements: Ⅰ: 18.40 (5.80, 8.00, 3.10, 1.50); Ⅱ: 18.80 (6.00, 8.00, 3.20, 1.60); Ⅲ: 8.60 (2.70, 3.30, 1.40, 1.20); Ⅳ: 9.60 (3.20, 3.60, 1.60, 1.20). Opisthosoma near rhomic, dorsum with small black chevron stripes and few clustered hairs. Venter yellow.

Epigynum (Figs. 29, 30, 31, 32). Epigynum with an anterior hood and a pair of posterior epigynal teeth, copulatory opening near the hood and slit like. Copulatory ducts not visible. Spermatheca kidney-shaped and convoluted.

Distribution. China (Yunnan).

REFERENCES

Benjamin, S. P., Dimitrov, D., Gillespie, R. G. and Hormiga, G. 2008. Family ties: molecular phylogeny of crab spiders (Araneae: Thomisidae). Cladistics, 24: 1-15.

Lehtinen, P. T. 2004. Taxonomic notes on the Misumenini (Araneae: Thomisidae: Thomisinae), primarily from the Palaearctic and Oriental Regions. In: Logunov, D. V. and Penney, D. (eds.), European Arachnology 2003 (Proceedings of the 21st European Colloquium of Arachnology, St.-Petersburg, 4-9 August 2003). Arthropoda Selecta (Special Issue), 1: 147-184.

Li, S-Q and Wang, X-P 2009. Endemic spiders in China. Online at: http://www.ChineseSpecies.com (accessed: 20 July 2009).

Murphy, F. and Murphy, J. 2000. An introduction to the spiders of South East Asia, with notes on all the genera. Malaysian Nature Society, Kuala Lumpur, Malaysia. 625pp.

Myers, N. 1988. Threatened biotas: "Hot spots" in tropical forests. The Environmentalist, 8: 1-20.

Ono, H. 1988. A revisional study of the spider family Thomisidae (Arachnida, Araneae) of Japan. National Science Museum, Tokyo. 252pp.

Platnick, N. I. 2009. The world spider catalog, version 10. 0. American Museum of Natural History. Available from: http: //research. amnh. org/entomology/spiders/catalog/index. html (accessed 20 July 2009).
Song, D-X 1993. A new species of Thomisidae from China (Araneae). Sinozoologia, 10: 89-91.
Song, D-X 1994. On three species of crab spiders from Hainan, China. Acta Arachnologica Sinica, 3: 119-123.
Yin, C-M, Peng, X-J, Yan, H-M and Kim, J-P 2004. One new species of the genus Borboropactus (Araneae, Thomisidae) from China. Korean Arachnology, 20: 27-31.
Wunderlich, J. 2004. The new spider (Araneae) family Borboropactidae from the tropics and fossil in Baltic amber. Beiträge zur Araneologie, 3: 1 737-1 746.

中国云南西双版纳蟹蛛一新属及三新种描述 (蜘蛛目, 蟹蛛科)

唐 果 李枢强*
中国科学院动物研究所 北京 100101
湖南师范大学生命科学学院 长沙 410081

摘 要 描述了采自云南西双版纳热带雨林的蟹蛛 1 新属: 副泥蟹蛛属 Paraborboropactus gen. nov. 及 3 新种: 郑氏副泥蟹蛛, 新种 Paraborboropactus zhengi sp. nov., 豆荚副泥蟹蛛, 新种 Paraborboropactus leguminaceus sp. nov. 以及菱形副泥蟹蛛, 新种 Paraborboropactus rhombus sp. nov.。模式标本均保存在中国科学院动物研究所。

郑氏副泥蟹蛛, 新种 Paraborboropactus zhengi sp. nov. (图 1～15)

正模 ♂; **副模**: 10 ♂♂, 12 ♀♀,云南省西双版纳国家自然保护区勐仑保护区原生热带季雨林, 2007 年 8 月, 郑国采集。

新种与本文中的豆荚副泥蟹蛛, 新种 Paraborboropactus leguminaceus sp. nov. 相似, 但有以下区别: 1) 新种触肢后侧突长/宽 = 2, 而后者 1; 2) 新种触肢跗舟背部有浓密毛丛而后者仅跗舟上半有毛丛; 3) 新种的外雌器生殖厝齿位于中部位置并指向后方, 而后者的生殖厝齿位于后部指向前侧方; 4) 生殖厝脊近倒 T 形, 而后者近三角形。

豆荚副泥蟹蛛, 新种 Paraborboropactus leguminaceus sp. nov. (图 16～27)

正模 ♂; **副模**: 2 ♂♂, 1 ♀,云南省西双版纳国家自然保护区勐仑保护区原生热带季雨林, 2007 年 7～8 月, 郑国采集。

新种近似于郑氏副泥蟹蛛, 新种 Paraborboropactus zhengi sp. nov., 二者的不同之处已叙述于上。

菱形副泥蟹蛛, 新种 Paraborboropactus rhombus sp. nov. (图 28～33)

正模 ♂; **副模**: 2 ♂♂, 1 ♀, 云南省西双版纳国家自然保护区勐仑保护区原生热带季雨林, 2006 年 1 月 5～12 日, 郑国采集。

新种外雌器有一个前位的中兜而本属其余两种的外雌器前面均有 1 个凹坑, 因而容易区别于其他两种。

关键词 分类学, 泥蟹蛛, 新属, 新种, 热带雨林.
中图分类号 Q959. 226

*通讯作者.